

LISTING OF THE CLAIMS

X This listing of claims will replace all prior versions, and listings, of claims in the application:

Claims:

Claims

1. (Currently Amended) A built-up type toy having a plurality of parts 10a-of polyhedron shape equipped with joining surfaces 11a-that are joined with other joining surfaces 11b-of other parts 10b, the built-up type toy comprising the parts respectively having magnet portions 100a-on the joining surfaces 11a-thereof, wherein the magnet portion 100a-of the part 10a-and the magnet portion 100b-on the joining surfaces 11b-of the parts 10b-are joined with each other by magnetic force thereof.
2. (Currently Amended) The built-up type toy of claim 1, wherein the magnet portion 100-is formed on a central area of the joining surface 11-of the part 10.
3. (Currently Amended) The built-up type toy of claim 1, wherein a plurality of magnet portions 100-are provided on the respective joining surfaces 11-of the part 10.
4. (Currently Amended) The built-up type toy of claim 2, wherein the magnet portion 100-is provided on all of the surfaces 11-of the part 10.
5. (Currently Amended) The built-up type toy of claim 1, wherein

the parts 10a-form a character, a number, a symbol, a diagram, or a certain shape on a plane thereof as the parts 10a-are joined with other parts 10b.

6. (Currently Amended) The built-up type toy of claim 1, wherein the parts 10-are comprised of a plurality of hexahedrons having shapes and sizes identical to each other.

7. (Currently Amended) The built-up type toy of claim 6, wherein the part 10-comprises:

a central part 10e-having a circular transverse section and having a plurality of magnet portions 100-arranged on an outer surface thereof at a predetermined interval; and

a plurality of fragmental parts 10d-and 10e-having a fan-shaped transverse section, the fragmental parts 10d-and 10e-respectively having a magnet portion 100d1-corresponding to the magnet portion 100e-on the outer surface of the central part 10e, and magnet portions 100d2-being joined with the magnet portions 100e2-of other fragmental parts 10e-on both side thereof,

wherein a cylindrical shape is formed as the central part 10e-is located on a central position and inner surfaces of the plurality of fragmental parts 10d-and 10e-are joined on the outer surface of the central part 10e.

8. (Currently Amended) The built-up type toy of claim 1, wherein the parts 10a-realize a variety of three-dimensional shapes as being joined with other parts 10b.

9. (Currently Amended) The built-up type toy of claim 8, wherein

the magnet portion 100 is formed on an edge area of the joining surfaces 11 of the part 10.

10. (Currently Amended) The built-up type toy of claim 8, wherein a plurality of magnet portions 100 are formed on each of the surface 11 of the part 10.

11. (Currently Amended) The built-up type toy of claim 10, wherein the magnet portions 100 are formed on all of the joining surfaces 11 of the part 10.

12. (Currently Amended) The built-up type toy of claim 8, wherein the parts 10 comprise:

a rotational shaft part 10f having a shape of a bar and formed with the magnet portions 100 on both ends thereof; and

a wheel part 10g formed with the magnet portion 100g joined with the magnet portion 100f of the rotational shaft part 10f on a central area thereof.

13. (Currently Amended) The built-up type toy of claim 8, wherein the parts 10 comprise:

a fragmental part 10h—having a detached shape achieved by detaching a section from an overall shape of joined product; and

a body part 10i having a residuary shape achieved by detaching the fragmental parts 10h from the overall shape of the joined product.

14. (Currently Amended) A built-up type toy having a plurality of

parts 10a-of polyhedron shape equipped with joining surfaces 11a-that are joined with other joining surfaces 11b-of other parts 10b, the built-up type toy comprising:

the parts respectively having magnet portions 100a-on the joining surfaces 11a-thereof;

wherein the magnet portion 100a-of the part 10a-and the magnet portion 100b-on the joining surface 11b-of the parts 10b-are joined with each other by magnetic force thereof,

and wherein the magnet portion 100-comprises:

a magnet 110-of which both magnetic poles are arranged to face directions different from each other, the magnet 110-being installed on a magnet installation recess 120-formed on the part 10; and

a separation preventing means 200-for preventing a separation of the magnet 110-from the magnet installation recess 120-while allowing a rotation of the magnet 110-in the inner space of the magnet installation recess 120.

15. (Currently Amended) The built-up type toy of claim 14, wherein the separation preventing means 200-comprises:

a rotational shaft 211-installed on a central area between both of the magnetic poles of the magnet 110; and

a rotational shaft installation recess 212-formed on an inner surface of the magnet installation recess 120-so that the rotational shaft 211-is parallel with an outer surface of the part 10.

16. (Currently Amended) The built-up type toy of claim 15, wherein the magnet 110-is a permanent magnet 110a-of cylindrical shape.

17. (Currently Amended) The built-up type toy of claim 14, wherein the separation preventing means 200 comprises:

a pair of recesses 221 formed on surfaces opposite to each other at a central area of both poles of the magnet 110; and

a pair of rotational shaft protrusions 222 formed on an inner surface of the magnet installation recess 120 so as to be inserted into the pair of recesses 221 while a virtual line connecting central positions of the pair of recesses 221 to each other is in parallel with an outer surface of the part 10.

18. (Currently Amended) The built-up type toy of claim 17, wherein the magnet 110 is a permanent magnet 110a of cylindrical shape.

19. (Currently Amended) The built-up type toy of claim 14, wherein the separation preventing means 200 has a hooking protrusion 231 for preventing the separation, which is formed on an opening of the magnet installation recess 120, and an inner diameter of the opening formed by the hooking protrusion 231 is narrower than a width and a length of the magnet 110.

20. (Currently Amended) The built-up type toy of claim 19, wherein the magnet 110 further comprises joining protrusions 232 on both magnetic poles thereof, of which an outer diameter is smaller than the inner diameter of the opening.

21. (Currently Amended) The built-up type toy of claim 20, wherein the magnet 110 is a permanent magnet 110a of cylindrical shape.

22. (Currently Amended) The built-up type toy of claim 14, wherein the separation preventing means 200 is a sealing lid 241 for closing the opening of the magnet installation recess 120.

23. (Currently Amended) The built-up type toy of claim 22, wherein a lid installation recess 242 is formed on a rim of the opening of the magnet installation recess 120, the lid installation recess 242 on which the sealing lid 241 is installed.

24. (Currently Amended) The built-up type toy of claim 23, wherein the magnet 110 is a cylindrical permanent magnet 110a or a spherical permanent magnet 110b.

25. (Currently Amended) The built-up type toy of claim 22, wherein the magnet installation recess 120 and the sealing lid 241 are formed integrally on the outer surface of the part 10, the magnet 110 is inserted after cutting the part 10, and the separation of the magnet 110 is prevented by attaching a cut piece on the part 10.

26. (Currently Amended) The built-up type toy of claim 25, wherein the part 10 is made of wood.

27. (Currently Amended) The built-up type toy of claim 26, wherein the magnet 110 is a cylindrical permanent magnet 110a or a spherical permanent magnet 110b.

28. (Currently Amended) The built-up type toy of claim 14, wherein the separation preventing means 200—is a magnet installation member 200a—inserted into the magnet installation recess—120, the magnet installation member 200a—comprising:

a circumferential portion 201—of which surface is in contact with the magnet installation recess—120; and

a lid portion 202—that closes an upper opening of the circumferential portion—201.

29. (Currently Amended) The built-up type toy of claim 28, wherein the magnet 410—is a cylindrical permanent magnet 110a—or a spherical permanent magnet 110b.

30. (Currently Amended) The built-up type toy of claim 28, wherein the magnet installation member 200a—further comprises a means 250—for fixing the magnet installation member 200a—into the magnet installation recess—120.

31. (Currently Amended) The built-up type toy of claim 30, wherein the magnet installation member fixing means 250—comprises a fixing wedge portion 251—extended downward of the circumferential portion 201—so as to be inserted and fixed onto the bottom surface of the magnet installation recess—120.

32. (Currently Amended) The built-up type toy of claim 30, wherein the magnet installation member fixing means 250—comprises a hooking protrusion 252—formed outward on an outer surface of the

circumferential portion 201 toward the lid portion 202.

33. (Currently Amended) The built-up type toy of claim 32, wherein the hooking protrusion 252—is an overall hooking protrusion 252a formed over all area of the outer surface of the circumferential portion 201 at a shape of a wedge.

34. (Currently Amended) The built-up type toy of claim 32, wherein the hooking protrusion 252—is a partial hooking protrusion 252b formed on a partial area of the outer surface of the circumferential portion 201.

35. (Currently Amended) The built-up type toy of claim 34, wherein the partial hooking protrusion 252b—is formed by cutting and bending a part of the circumferential portion 201.

36. (Currently Amended) The built-up type toy of claim 32, wherein the hooking protrusion 252—is a lower hooking protrusion 252e formed on a lower end area of the outer surface of the circumferential portion 201.

37. (Currently Amended) The built-up type toy of claim 36, further comprising a tilted portion 253—that is tilted downward and inward from the lower hooking protrusion 252e at a certain degree.

38. (Currently Amended) The built-up type toy of claim 37, wherein the lower hooking protrusion 252e and the tilted portion 253—are

formed integrally with each other by bending a lower portion of the circumferential portion 201.

39. (Currently Amended) The built-up type toy of claim 30, wherein the magnet installation member fixing means 250—comprises a screw thread 254-formed on the outer surface of the circumferential portion 201.

40. (Currently Amended) The built-up type toy of claim 39, wherein the magnet installation member fixing means 250—comprises a fixing tool insertion recess 255-so formed on an upper surface of the lid portion 202—as to insert the magnet installation member 200a—into the magnet installation recess 120—by rotating the magnet installation member 200a—with a magnet installation member fixing tool 260.

41. (Currently Amended) The built-up type toy of claim 40, wherein the fixing tool insertion recess 255—is an insertion recess 255a having a circular transverse section.

42. (Currently Amended) The built-up type toy of claim 41, wherein a plurality of insertion recesses 255a—having the circular transverse section are formed in a radial fashion.

43. (Currently Amended) The built-up type toy of claim 40, wherein the fixing tool insertion recess 255—is an insertion recess 255b having a cross-shaped transverse section.

44. (Currently Amended) The built-up type toy of ~~any one of~~
claims ~~claim 14 to 43~~, wherein the magnet portion ~~100~~ is formed on a
central area of the joining surface ~~11~~ of the part ~~10~~.

45. (Currently Amended) The built-up type toy of ~~any one of~~
claims ~~claim 14 to 43~~, wherein a plurality of magnet portions ~~100~~ are
formed on each joining surface ~~11~~ of the part ~~10~~.

46. (Currently Amended) The built-up type toy of claim 45,
wherein the magnet portions ~~100~~ are formed all of the joining surfaces ~~11~~ of
the part ~~10~~.

47. (Currently Amended) The built-up type toy of ~~any one of~~
claims ~~claim 14 to 43~~, wherein the parts ~~10a~~ form a character, a number, a
symbol, a diagram, or a certain shape on a plane thereof as the parts ~~10a~~ are
joined with other parts ~~10b~~.

48. (Currently Amended) The built-up type toy of ~~any one of~~
claims ~~claim 14 to 43~~, wherein the parts ~~10~~ are comprised of a plurality of
hexahedrons having shapes and sizes identical to each other.

49. (Currently Amended) The built-up type toy of claim 48,
wherein the part ~~10~~ comprises:

a central part ~~10e~~ having a circular transverse section and having a
plurality of magnet portions ~~100~~ arranged on an outer surface thereof at a
predetermined interval; and

a plurality of fragmental parts ~~10d~~ and ~~10e~~ having a fan-shaped

transverse section, the fragmental parts $10d$ and $10e$ —respectively having a magnet portion $100d1$ —corresponding to the magnet portion $100e$ —on the outer surface of the central part $10e$, and magnet portions $100d2$ —being joined with the magnet portions $100e2$ —of other fragmental parts $10e$ —on both side thereof,

wherein a cylindrical shape is formed as the central part $10e$ —is located on a central position and inner surfaces of the plurality of fragmental parts $10d$ and $10e$ —are joined on the outer surface of the central part $10e$.

50. (Currently Amended) The built-up type toy of ~~any one of claims~~claim 14 to 43, wherein the parts $10a$ —realize a variety of three-dimensional shapes as being joined with other parts $10b$.

51. (Currently Amended) The built-up type toy of claim 50, wherein the magnet portion 100 —is formed on an edge area of the joining surfaces 11 —of the part 10 .

52. (Currently Amended) The built-up type toy of claim 50, wherein a plurality of magnet portions 100 —are formed on each of the surface 11 —of the part 10 .

53. (Currently Amended) The built-up type toy of claim 52, wherein the magnet portions 100 —are formed on all of the joining surfaces 11 —of the part 10 .

54. (Currently Amended) The built-up type toy of claim 50, wherein the parts 10 —comprise:

a rotational shaft part 10f having a shape of a bar and formed with the magnet portions 100 on both ends thereof; and

a wheel part 10g formed with the magnet portion 100g joined with the magnet portion 100f of the rotational shaft part 10f on a central area thereof.

55. (Currently Amended) The built-up type toy of claim 50, wherein the parts 10 comprise:

a fragmental part 10h having a detached shape achieved by detaching a section from an overall shape of joined product; and

a body part 10i having a residuary shape achieved by detaching the fragmental parts 10h from the overall shape of the joined product.

56. (Currently Amended) A joining apparatus with rotatable magnet comprising:

a magnet 110 of which both magnetic poles are arranged to face directions different from each other, the magnet 110 being installed on a magnet installation recess 120 formed on the part 10; and

a separation preventing means 200 for preventing a separation of the magnet 110 from the magnet installation recess 120 while allowing a rotation of the magnet 110 in the inner space of the magnet installation recess 120.

57. (Currently Amended) The joining apparatus with rotatable magnet of claim 56, wherein the separation preventing means 200 comprises:

a rotational shaft 211 installed on a central area between both of the

magnetic poles of the magnet 110; and

a rotational shaft installation recess 212-formed on an inner surface of the magnet installation recess 120-so that the rotational shaft 211-is parallel with an outer surface of the part 10.

58. (Currently Amended) The joining apparatus with rotatable magnet of claim 57, wherein the magnet 110-is a permanent magnet 110a-of cylindrical shape.

59. (Currently Amended) The joining apparatus with rotatable magnet of claim 56, wherein the separation preventing means 200 comprises:

a pair of recesses 221-formed on surfaces opposite to each other at a central area of both poles of the magnet 110; and

a pair of rotational shaft protrusions 222-formed on an inner surface of the magnet installation recess 120-so as to be inserted into the pair of recesses 221-while a virtual line connecting central positions of the pair of recesses 221-to each other is in parallel with an outer surface of the part 10.

60. (Currently Amended) The joining apparatus with rotatable magnet of claim 59, wherein the magnet 110-is a permanent magnet 110a-of cylindrical shape.

61. (Currently Amended) The joining apparatus with rotatable magnet of claim 56, wherein the separation preventing means 200-has a hooking protrusion 231-for preventing the separation, which is formed on an opening of the magnet installation recess 120, and an inner diameter of the

opening formed by the hooking protrusion 231—is narrower than a width and a length of the magnet 110.

62. (Currently Amended) The joining apparatus with rotatable magnet of claim 61, wherein the magnet 110—further comprises joining protrusions 232—on both magnetic poles thereof, of which an outer diameter is smaller than the inner diameter of the opening.

63. (Currently Amended) The joining apparatus with rotatable magnet of claim 62, wherein the magnet 110—is a permanent magnet 110a—of cylindrical shape.

64. (Currently Amended) The joining apparatus with rotatable magnet of claim 56, wherein the separation preventing means 200—is a sealing lid 241—for closing the opening of the magnet installation recess 120.

65. (Currently Amended) The joining apparatus with rotatable magnet of claim 64, wherein a lid installation recess 242—is formed on a rim of the opening of the magnet installation recess 120, the lid installation recess 242—on which the sealing lid 241—is installed.

66. (Currently Amended) The joining apparatus with rotatable magnet of claim 65, wherein the magnet 110—is a cylindrical permanent magnet 110a—or a spherical permanent magnet 110b.

67. (Currently Amended) The joining apparatus with rotatable magnet of claim 64, wherein the magnet installation recess 120—and the

sealing lid 241—are formed integrally on the outer surface of the part 10, the magnet 110—is inserted after cutting the part 10, and the separation of the magnet 110—is prevented by attaching a cut piece on the part 10.

68. (Currently Amended) The joining apparatus with rotatable magnet of claim 67, wherein the part 10—is made of wood.

69. (Currently Amended) The joining apparatus with rotatable magnet of claim 68, wherein the magnet 110—is a cylindrical permanent magnet 110a—or a spherical permanent magnet 110b.

70. (Currently Amended) The joining apparatus with rotatable magnet of claim 56, wherein the separation preventing means 200—is a magnet installation member 200a—inserted into the magnet installation recess 120, the magnet installation member 200a—comprising:

a circumferential portion 201—of which surface is in contact with the magnet installation recess 120; and

a lid portion 202—that closes an upper opening of the circumferential portion 201.

71. (Currently Amended) The joining apparatus with rotatable magnet of claim 70, wherein the magnet 110—is a cylindrical permanent magnet 110a—or a spherical permanent magnet 110b.

72. (Currently Amended) The joining apparatus with rotatable magnet of claim 70, wherein the magnet installation member 200a—further comprises a means 250—for fixing the magnet installation member 200a—into

the magnet installation recess-120.

73. (Currently Amended) The joining apparatus with rotatable magnet of claim 72, wherein the magnet installation member fixing means 250—comprises a fixing wedge portion 251—extended downward of the circumferential portion 201—so as to be inserted and fixed onto the bottom surface of the magnet installation recess-120.

74. (Currently Amended) The joining apparatus with rotatable magnet of claim 72, wherein the magnet installation member fixing means 250—comprises a hooking protrusion 252—formed outward on an outer surface of the circumferential portion 201—toward the lid portion-202.

75. (Currently Amended) The joining apparatus with rotatable magnet of claim 74, wherein the hooking protrusion 252—is an overall hooking protrusion 252a—formed over all area of the outer surface of the circumferential portion 201—at a shape of a wedge.

76. (Currently Amended) The joining apparatus with rotatable magnet of claim 74, wherein the hooking protrusion 252—is a partial hooking protrusion 252b—formed on a partial area of the outer surface of the circumferential portion-201.

77. (Currently Amended) The joining apparatus with rotatable magnet of claim 76, wherein the partial hooking protrusion 252b—is formed by cutting and bending a part of the circumferential portion-201.

78. (Currently Amended) The joining apparatus with rotatable magnet of claim 74, wherein the hooking protrusion 252—is a lower hooking protrusion 252e—formed on a lower end area of the outer surface of the circumferential portion 201.

79. (Currently Amended) The joining apparatus with rotatable magnet of claim 78, further comprising a tilted portion 253—that is tilted downward and inward from the lower hooking protrusion 252e—at a certain degree.

80. (Currently Amended) The joining apparatus with rotatable magnet of claim 79, wherein the lower hooking protrusion 252e—and the tilted portion 253—are formed integrally with each other by bending a lower portion of the circumferential portion 201.

81. (Currently Amended) The joining apparatus with rotatable magnet of claim 72, wherein the magnet installation member fixing means 250—comprises a screw thread 254—formed on the outer surface of the circumferential portion 201.

82. (Currently Amended) The joining apparatus with rotatable magnet of claim 81, wherein the magnet installation member fixing means 250—comprises a fixing tool insertion recess 255—so formed on an upper surface of the lid portion 202—as to insert the magnet installation member 200a—into the magnet installation recess 120—by rotating the magnet installation member 200a—with a magnet installation member fixing tool 260.

83. (Currently Amended) The joining apparatus with rotatable magnet of claim 82, wherein the fixing tool insertion recess 255—is an insertion recess 255a—having a circular transverse section.

84. (Currently Amended) The joining apparatus with rotatable magnet of claim 83, wherein a plurality of insertion recesses 255a—having the circular transverse section are formed in a radial fashion.

85. (Currently Amended) The joining apparatus with rotatable magnet of claim 82, wherein the fixing tool insertion recess 255—is an insertion recess 255b—having a cross-shaped transverse section.